

PATENT CLAIMS

1. An automatic driver device (3) for joining components (2), especially vehicle bodies, in a driving station (1), comprising a basic carrier (8), and with a plurality of automatic driving tools (4, 5), which are mounted thereon movably along a plurality of axes by means of an adjusting means, characterized in that a plurality of said driving tools (4, 5) are integrated in at least one screwdriver group (6, 7) and are mounted together movably at the basic carrier (8) by means of an adjusting means (9).

2. A driver device in accordance with claim 1, characterized in that one or more said driving tools (4, 5) are additionally mounted movably in relation to one another by means of at least one said adjusting means (9, 17, 25) within the screwdriver group (6, 7).

3. A driver device in accordance with claim 1 or 2, characterized in that at least one said adjusting means is designed as a multistep carriage unit (9) that can be telescoped or cascaded.

4. A driver device in accordance with claim 3, characterized in that the carriage unit (9) has a plurality of said carriage steps (10, 11) that are movable relative to one another along at least one axis, preferably a linear axis.

5. A driver device in accordance with claim 3 or 4, characterized in that the carriage steps (10, 11) are mounted next to each other.

6. A driver device in accordance with claim 3, 4 or 5, characterized in that at least one said

carriage step (10) has a plate- or frame-like subcarrier (14, 15) with a plurality of said driving tools (4, 5) integrated in a screwdriver group (6, 7).

7. A driver device in accordance with one of the above claims, characterized in that at least one said driver tools (4, 5) from the screwdriver group (6, 7) is arranged on at least one next carriage stage (11) and/or on a transverse adjusting means (17).

8. A driver device in accordance with one of the above claims, characterized in that the carriage steps (10, 11) have controllable carriage drives (12, 13) of their own.

9. A driver device in accordance with one of the above claims, characterized in that the adjusting means (9, 16, 17) have a smaller width and length than the basic carrier (8).

10. A driver device in accordance with one of the above claims, characterized in that a plurality of said carriage units (9) are arranged next to each other on the basic carrier (8).

11. A driver device in accordance with one of the above claims, characterized in that each said driver tools (4, 5) has a linear transverse adjusting means (17) of its own with a controllable adjusting drive (26).

12. A driver device in accordance with one of the above claims, characterized in that the transverse adjusting means (17) is arranged between the driver tools (4, 5) and the multistep carriage unit (9) or a one-step longitudinal adjusting means (16).

13. A driver device in accordance with one of the above claims, characterized in that the driver tools (4, 5) has a bracket (18) and a driving unit (20) movable thereon along one or more axes.

5 14. A driver device in accordance with one of the above claims, characterized in that a height adjusting means (24) is arranged between the bracket (18) and the driving unit (20).

15. A driver device in accordance with one of the above claims, characterized in that a pivoting adjusting means (25) is arranged between the bracket (18) and the driving unit (20).

10 16. A driver device in accordance with one of the above claims, characterized in that the driving unit (20) has a driving spindle (21) with a driving head (22) and with a carried spindle drive (23).

17. A driver device in accordance with one of the above claims, characterized in that the basic carrier (8) has a plate- or frame-like design.

15 18. A driver device in accordance with one of the above claims, characterized in that the basic carrier (8) has a chassis and a guide (30), preferably a rail guide, for withdrawing and extending from the driving station (1).

19. A driver device in accordance with one of the above claims, characterized in that the basic carrier (8) has a centering and lifting unit (27).

20. A driver device in accordance with one of the above claims, characterized in that the centering and lifting unit (27) comprises a plurality of introducing units (28) with said lifting devices (29).

21. A driver device in accordance with one of the above claims, characterized in that the driver device (3) has a control (34), to which said adjusting means (9, 16, 17, 24, 25) and the spindle drives (23) are connected.

22. A driver device in accordance with one of the above claims, characterized in that the control (34) is designed as a numeric multi-axis control, preferably as a robot control.

23. A driving station for joining said components (2), especially vehicle bodies, with an automatic driver device (3), characterized in that the driver device (3) has a design according to the above claims.

24. A driving station in accordance with claim 22, characterized in that a spindle carrier (35) is arranged between the components (2) and the driver device (3).

25. A process for joining said components (2), especially vehicle bodies, in a driving station (1) with an automatic driver device (3), comprising a basic carrier (8), and with a plurality of automatic driving tools (4, 5) mounted movably along multiple axes thereon by means of an adjusting means, characterized in that a plurality of said driving tools (4, 5) are integrated in a screwdriver group (6, 7) and are adjusted together by means of an adjusting means (9).

26. A process in accordance with claim 25, characterized in that one or more said driving tools (4, 5) are additionally adjusted relative to one another by means of at least one said adjusting means (9, 17, 25) within the screwdriver group (6, 7).